

Attorney Docket No. 890-004.002
Serial No. 09/478,677

Specification Amendments

Please amend the paragraphs beginning on page 1, line 6 and ending on page 2, line 30 as follows:

The present invention relates to a foam sponge cutting apparatus with both vertical and horizontal cutting devices. A vertical cutting device and a horizontal cutting device are at the same time disposed on the blade strip frame of the cutting apparatus. The blade strips are moved up and down, while keeping in a horizontal state or moved left and right, while keeping in a vertical state. By means of the vertical and horizontal cutting devices, the foam sponge or the like can be cut into products with various irregular or curved shapes in both vertical and horizontal direction directions.

A conventional foam sponge cutting apparatus uses a blade which cannot be moved so that the foam sponge can be cut only along a straight line. Also such foam sponge cutting apparatus lacks a blade deflection rectifying structure so that it is impossible to adjust the blade in time and the cutting face is often unplane. Moreover, in the case that the blade becomes rusted or obtuse, it is quite difficult to replace the blade. In addition, in cutting, when it is desired to change the position of the horizontal blade strip, it is necessary to drive a control mechanism to shift the large and heavy structure body. This wastes a great amount of power.

SUMMARY OF THE INVENTION

It is therefore a primary object of the present invention to provide a foam sponge cutting apparatus with both vertical and horizontal cutting devices, in which the horizontal blade strip can be moved up and down, while keeping in a horizontal state so that the foam sponge block can be cut into products with various irregular or curved

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shapes in a horizontal direction. Therefore, the cutting operation can be speeded up to save cost.

It is a further object of the present invention to provide the above foam sponge cutting apparatus in which the vertical blade strip can be moved left and right, while keeping in a vertical state so that the foam sponge block can be cut into products with various irregular or cured shapes in a vertical direction. Therefore, the cutting operation can be speeded up to save cost.

It is still a further object of the present invention to provide the above foam sponge cutting apparatus in which by means of the pulley units, linear slide bars and guide rails, the movement of the blade strip can be accomplished by reversely synchronously sliding only a few elements. Therefore, it is no ~~more longer~~ necessary to move the entire blade strip frame body, and thus the power consumption is lowered.

According to the above objects, the motor drives the transmission shaft to rotate and, via the thread rods, the left and right seat bodies of the blade turning unit are respectively synchronously moved along the linear slide bars and the guide rails of the linear slide bar seats. A guide wheel and a blade seat pulley respectively disposed on the two seat bodies are also synchronously moved along therewith to keep the working section of the blade strip moving up and down in a horizontal state or left and right in a vertical state. A blade strip deflection rectifying mechanism is able to automatically detect and rectify the deflection of the blade strip. The working ~~beneath~~ surface is reciprocally linearly moved back and forth, and the positions of the foam sponge and blade strip on the plane are adjusted by means of numeral control so as to cut the foam sponge into products with various irregular or curved shapes. A pneumatic cylinder serves to push the guide wheel to loosen the blade strip for easy replacement thereof. Therefore, the horizontal and vertical cutting operations are facilitated and stabilized and the power consumption is reduced, and thus the cost is lowered.

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The present invention can be best understood through the following description and accompanying drawings, wherein: